

SEQUENCE LISTING

<110> Gaiger, Alexander
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 Sleath, Paul R.
 Mossman, Sally
 Evans, Lawrence
 Spies, A. Gregory
 Boydston, Jeremy

<120> COMPOSITIONS AND METHODS FOR WT1
 SPECIFIC IMMUNOTHERAPY

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<141> 2001-08-24

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 Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
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 Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
 225 230 235 240
 Met Asn Leu Gly Ala Thr Leu Lys Gly Met Ala Ala Gly Ser Ser Ser
 245 250 255
 Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Gly Ile Gly Tyr Glu
 260 265 270
 Ser Asp Asn His Thr Ala Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile
 275 280 285
 His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Ser
 290 295 300
 Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys
 305 310 315 320
 Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys
 325 330 335
 Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
 340 345 350
 Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
 355 360 365
 Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
 370 375 380
 Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
 385 390 395 400
 His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
 405 410 415
 Arg Trp His Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
 420 425 430
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu His Val Ala
 435 440 445
 Leu

<211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

<400> 321
 Pro Ser Gln Ala Ser Ser Gly Gln Ala
 1 5

<210> 322
 <211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

<400> 322
 Ser Ser Gly Gln Ala Arg Met Phe Pro
 1 5

<210> 323
 <211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

<400> 323
 Gln Ala Arg Met Phe Pro Asn Ala Pro
 1 5

<210> 324
 <211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

<400> 324
 Met Phe Pro Asn Ala Pro Tyr Leu Pro
 1 5

<210> 325
 <211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

<400> 325
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys
 1 5

<210> 326
 <211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

<400> 326
 Ala Pro Tyr Leu Pro Ser Cys Leu Glu
 1 5

<210> 327
 <211> 1029
 <212> DNA
 <213> Homo sapiens

<400> 327
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 tgcggtccgt gcaaaatgat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180
 aaactgaccg ttgcaaaaact gaacatcgat caaaaccctg gcactgcgcc gaaatatggc 240
 atccgtggta tcccgaactct gctgctgttc aaaaacgggtg aagtggcggc aaccaaagtg 300
 ggtgcactgt ctaaagggtca gttgaaagag ttctctgacg ctaacctggc cggttctggt 360
 tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggtcg tgctagctct 420
 ggtggcagcg gtctggttcc gcgtggtagc tctggttcgg gggacgacga cgacaaatct 480
 agtaggcaca gcacagggtg cgagagcgat aaccacacaa cgcccatcct ctgcgagacc 540
 caatacagaa tacacacgca cgggtgtcttc agaggcattc aggatgtgag acgtgtgcct 600
 ggagtagccc cgactcttgt acggtcggca tctgagacca gtgagaaacg ccccttcatg 660
 tgtgcttacc caggctgcaa taagagatat tttaagctgt ccacttaca gatgcacagc 720
 aggaagcaca ctggtgagaa accataaccag tgtgacttca aggactgtga acgaaggttt 780
 tttcgttcag accagctcaa aagacaccaa aggagacata caggtgtgaa accattccag 840
 tgtaaaactt gtcagcgaaa gttctcccg gtcgaccacc tgaagaccca caccaggact 900
 catacagggtg aaaagccctt cagctgtcgg tggccaagtt gtcagaaaaa gtttgcccgg 960
 tcagatgaat tagtccgcca tcacaacatg catcagagaa acatgaccaa actccagctg 1020
 gcgctttga 1029

<210> 328
 <211> 1233
 <212> DNA
 <213> Homo sapiens

<400> 328
 atgcagcatc accaccatca ccacatgagc gataaaaatta ttcacctgac tgacgacagt 60
 tttgacacgg atgtactcaa agcggacggg gcgatcctcg tcgatttctg ggcagagtgg 120
 tgcggtccgt gcaaaatgat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180
 aaactgaccg ttgcaaaaact gaacatcgat caaaaccctg gcactgcgcc gaaatatggc 240
 atccgtggta tcccgaactct gctgctgttc aaaaacgggtg aagtggcggc aaccaaagtg 300
 ggtgcactgt ctaaagggtca gttgaaagag ttctctgacg ctaacctggc cggttctggt 360
 tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggtcg tgctagctct 420
 ggtggcagcg gtctggttcc gcgtggtagc tctggttcgg gggacgacga cgacaaatct 480
 agtaggggct ccgacgttcg tgacctgaac gcactgctgc cggcagttcc gtccctgggt 540
 ggtggtggtg gttgcgcaact gccggttagc ggtgcagcac agtgggctcc ggttctggac 600
 ttcgcaccgc cgggtgcac cgcatacggg tccctgggtg gtcgggcacc gccgccggca 660
 ccgccgccgc cgcgccgcc gccgccgcac tccttcatca aacaggaacc gagctgggg 720
 ggtgcagaac cgcacgaaga acagtgcctg agcgcattca ccgttcaact ctccggccag 780
 ttactggca cagccggagc ctgtcgctac gggcccttcg gtctctctcc gccagccag 840
 gcgtcatccg gccaggccag gatgtttcct aacgcgccct acctgccag ctgcctcgag 900
 agccagccc ctattcgcaa tcagggttac agcacggtea ccttcgacgg gacgccagc 960
 tacggtcaca cgcctcgca ccatgcggcg cagttcccca accactcatt caagcatgag 1020
 gatcccattg gccagcagg ctcgctgggt gagcagcagt actcgggtgcc gccccgggtc 1080
 tatggctgcc acacccccac cgacagctgc accggcagcc aggttttgc gctgaggacg 1140
 ccctacagca gtgacaattt ataccaaatg acatcccagc ttgaatgcat gacctggaat 1200
 cagatgaact taggagccac cttaaagggc tga 1233

<210> 329

<211> 1776
 <212> DNA
 <213> Homo sapiens

<400> 329
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 tttgacacgg atgtactcaa agcggacggg gcgatcctcg tcgatttctg ggcagagtgg 120
 tgcggtccgt gcaaaatgat cgcgccgatt ctggatgaaa tcgctgacga atatcagggc 180
 aaactgaccg ttgcaaaact gaacatcgat caaaaccctg gcaactgcgc gaaatatggc 240
 atccgtggta tcccgaactc gctgctgttc aaaaacgggt aagtggcggc aaccaaagtg 300
 ggtgcactgt ctaaaggtea gttgaaagag ttccctcgac ctaacctggc cggttctggt 360
 tctggccata tgcagcatca ccaccatcac cactgttcta tcgaaggteg tgtagctct 420
 ggtggcagcg gtctggttcc gctggttagc tctggttcgg gggacgacga cgacaaatct 480
 agtaggatgg gctccgacgt tctgacctg aacgcactgc tgccggcagt tccgtccctg 540
 ggtggtgggt gtggttgccg actgcgggtt agcgggtgag cacagtgggc tccggttctg 600
 gacttcgcac cgcggggtgc atccgcatac ggttccctgg gtggtccggc accgccggcg 660
 gcaccgccgc cgcgcgcgcg gccgcgcgcg cactccttca tcaaacagga accgagctgg 720
 ggtggtgcag aaccgcacga agaacagtgc ctgagcgcac tcaccgttca cttctccggc 780
 cagttcactg gcacagccgg agcctgtcgc tacgggccct tgggtcctcc tccgccagc 840
 caggcgtcat ccggccaggc caggatgttt cctaacgcgc cctacctgcc cagctgctc 900
 gagagccagc ccgctattcg caatcagggg tacagcacgg tcaccttcga cgggacgccc 960
 agctacggtc acacgccctc gcaccatgcg ggcagttcc ccaaccactc attcaagcat 1020
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 gtctatggct gccacacccc caccgacagc tgcacgggca gccaggcttt gctgctgagg 1140
 acgccctaca gcagtgaaca ttatatacaa atgacatccc agcttgaatg catgacctgg 1200
 aatcagatga acttaggagc caccttaaaag ggccacagca cagggtacga gagcgataac 1260
 cacacaacgc ccactcctcg cggagcccaa tacagaatac acacgcacgg tgtcttcaga 1320
 ggcattcagg atgtgcgacg tgtgcctgga gtagccccga ctcttgtagc gtcggcatct 1380
 gagaccagtg agaaacgccc ctcatgtgt gcttaccag gctgcaataa gagatatttt 1440
 aagctgtccc acttacagat gcacagcagg aagcacactg gtgagaaacc ataccagtgt 1500
 gacttcaagg actgtgaacg aaggtttttt cgttcagacc agctcaaaag acaccaaagg 1560
 agacatacag gtgtgaaacc attccagtgt aaaacttgc agcgaaagtt ctcccggtcc 1620
 gaccacctga agaccacac caggactcat acaggtgaaa agcccttcag ctgtcggtgg 1680
 ccaagttgtc agaaaaagtt tgcgcgttca gatgaattag tccgccatca caacatgcat 1740
 cagagaaaca tgaccaaact ccagctggcg ctttga 1776

<210> 330
 <211> 771
 <212> DNA
 <213> Homo sapiens

<400> 330
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 gcagttccgt ccctgggtgg tgggtggtgg tgcgcaactgc cggttagcgg tgcagcacag 120
 tgggtcccg ttctggactt cgcaccgccg ggtgcatccg catacggttc cctgggtggt 180
 ccggcacccg cgcgggcacc gccgcgcgcg ccgcgcgcgc cgcgcactc cttcatcaa 240
 caggaaccga gctgggggtg tgcagaaccg cacgaagaac agtgccctgag cgcattcacc 300
 gttcacttct ccggccagtt cactggcaca gccggagcct gtcgctacgg gcccttcggg 360
 cctcctccgc ccagccaggc gtcctccggc caggccagga tgtttcctaa cgcgcctac 420
 ctgcccagct gcctcgagag ccagcccgct attcgcaatc agggttacag cacggtcacc 480
 ttcgacggga cgcacagcta cggtcacacg cctcgcacc atgcggcgca gttcccaaac 540
 cactcattca agcatgagga tcccatgggc cagcagggtc cgctgggtga gcagcagtag 600
 tgggtgcgcg ccccggtcta tggctgccac acccccaccg acagctgcac cggcagccag 660
 gctttgctgc tgaggacgcc ctacagcagt gacaatttat accaaatgac atcccagctt 720

gaatgcatga cctggaatca gatgaactta ggagccacct taaagggctg a

771

<210> 331

<211> 567

<212> DNA

<213> Homo sapiens

<400> 331

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atgcagcatc accaccatca ccaccacagc acagggtacg agagcgataa ccacacaacg 60
cccatcctct gcggagccca atacagaata cacacgcacg gtgtcttcag aggcattcag 120
gatgtgcgac gtgtgcctgg agtagccccc actcttgtag ggtcggcatc tgagaccagt 180
gagaaacgcc ccttcattgtg tgcttaccca ggctgcaata agagatattt taagctgtcc 240
cacttacaga tgcacagcag gaagcacact ggtgagaaac cataccagtg tgacttcaag 300
gactgtgaac gaagggtttt tcgttcagac cagctcaaaa gacaccaaag gagacataca 360
ggtgtgaaac cattccagtg taaaacttgt cagcgaaagt tctcccggtc cgaccacctg 420
aagaccaca ccaggactca tacagggtgaa aagcccttca gctgtcgggtg gccaaagttgt 480
cagaaaaagt ttgcccggtc agatgaatta gtccgccatc acaacatgca tcagagaaac 540
atgaccaaac tccagctggc gctttga 567

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<210> 332

<211> 342

<212> PRT

<213> Homo sapiens

<400> 332

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Met Gln His His His His His Met Ser Asp Lys Ile Ile His Leu
              5              10              15
Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
              20              25              30
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
              35              40              45
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
              50              55              60
Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
              65              70              75              80
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
              85              90              95
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
              100             105             110
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
              115             120             125
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
              130             135             140
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser
              145             150             155             160
Ser Arg His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile
              165             170             175
Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe Arg Gly
              180             185             190
Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg
              195             200             205

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Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro
 210 215 220
 Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met His Ser
 225 230 235 240
 Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys
 245 250 255
 Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg
 260 265 270
 His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe
 275 280 285
 Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu
 290 295 300
 Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg
 305 310 315 320
 Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn Met Thr
 325 330 335
 Lys Leu Gln Leu Ala Leu
 340

<210> 333
 <211> 410
 <212> PRT
 <213> Homo sapiens

<400> 333
 Met Gln His His His His His His Met Ser Asp Lys Ile Ile His Leu
 5 10 15
 Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
 20 25 30
 Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
 35 40 45
 Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
 50 55 60
 Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
 65 70 75 80
 Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
 85 90 95
 Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
 100 105 110
 Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
 115 120 125
 His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
 130 135 140
 Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Lys Ser
 145 150 155 160
 Ser Arg Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val
 165 170 175
 Pro Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala
 180 185 190
 Ala Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala
 195 200 205
 Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro

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      210                215                220
Pro Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly
225                230                235                240
Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His
      245                250                255
Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro
      260                265                270
Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met
      275                280                285
Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala
      290                295                300
Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser
305                310                315                320
Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser
      325                330                335
Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln
      340                345                350
Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp
      355                360                365
Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser
      370                375                380
Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn
385                390                395                400
Gln Met Asn Leu Gly Ala Thr Leu Lys Gly
      405                410

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<210> 334
<211> 591
<212> PRT
<213> Homo sapiens

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<400> 334
Met Gln His His His His His His Met Ser Asp Lys Ile Ile His Leu
      5                10                15
Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
      20                25                30
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
      35                40                45
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
      50                55                60
Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
      65                70                75                80
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
      85                90                95
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
      100                105                110
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
      115                120                125
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
      130                135                140
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser
      145                150                155                160
Ser Arg Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala

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				165					170					175			
Val	Pro	Ser	Leu	Gly	Gly	Gly	Gly	Gly	Cys	Ala	Leu	Pro	Val	Ser	Gly		
			180					185					190				
Ala	Ala	Gln	Trp	Ala	Pro	Val	Leu	Asp	Phe	Ala	Pro	Pro	Gly	Ala	Ser		
		195					200					205					
Ala	Tyr	Gly	Ser	Leu	Gly	Gly	Pro	Ala	Pro	Pro	Pro	Ala	Pro	Pro	Pro		
	210					215					220						
Pro	Pro	Pro	Pro	Pro	Pro	His	Ser	Phe	Ile	Lys	Gln	Glu	Pro	Ser	Trp		
225					230					235					240		
Gly	Gly	Ala	Glu	Pro	His	Glu	Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val		
			245						250						255		
His	Phe	Ser	Gly	Gln	Phe	Thr	Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly		
			260					265					270				
Pro	Phe	Gly	Pro	Pro	Pro	Pro	Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg		
		275					280					285					
Met	Phe	Pro	Asn	Ala	Pro	Tyr	Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro		
	290					295					300						
Ala	Ile	Arg	Asn	Gln	Gly	Tyr	Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro		
305				310						315					320		
Ser	Tyr	Gly	His	Thr	Pro	Ser	His	His	Ala	Ala	Gln	Phe	Pro	Asn	His		
			325						330					335			
Ser	Phe	Lys	His	Glu	Asp	Pro	Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu		
			340					345					350				
Gln	Gln	Tyr	Ser	Val	Pro	Pro	Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr		
		355				360						365					
Asp	Ser	Cys	Thr	Gly	Ser	Gln	Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser		
	370				375						380						
Ser	Asp	Asn	Leu	Tyr	Gln	Met	Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp		
385					390					395					400		
Asn	Gln	Met	Asn	Leu	Gly	Ala	Thr	Leu	Lys	Gly	His	Ser	Thr	Gly	Tyr		
			405					410						415			
Glu	Ser	Asp	Asn	His	Thr	Thr	Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg		
			420					425					430				
Ile	His	Thr	His	Gly	Val	Phe	Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val		
		435				440						445					
Pro	Gly	Val	Ala	Pro	Thr	Leu	Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu		
	450					455					460						
Lys	Arg	Pro	Phe	Met	Cys	Ala	Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe		
465				470						475				480			
Lys	Leu	Ser	His	Leu	Gln	Met	His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys		
			485						490					495			
Pro	Tyr	Gln	Cys	Asp	Phe	Lys	Asp	Cys	Glu	Arg	Arg	Phe	Phe	Arg	Ser		
		500						505					510				
Asp	Gln	Leu	Lys	Arg	His	Gln	Arg	Arg	His	Thr	Gly	Val	Lys	Pro	Phe		
	515						520					525					
Gln	Cys	Lys	Thr	Cys	Gln	Arg	Lys	Phe	Ser	Arg	Ser	Asp	His	Leu	Lys		
	530					535					540						
Thr	His	Thr	Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Phe	Ser	Cys	Arg	Trp		
545					550					555					560		
Pro	Ser	Cys	Gln	Lys	Lys	Phe	Ala	Arg	Ser	Asp	Glu	Leu	Val	Arg	His		
			565					570						575			
His	Asn	Met	His	Gln	Arg	Asn	Met	Thr	Lys	Leu	Gln	Leu	Ala	Leu			
			580					585					590				

<210> 335
 <211> 256
 <212> PRT
 <213> Homo sapiens

<400> 335
 Met Gln His His His His His His Gly Ser Asp Val Arg Asp Leu Asn
 5 10 15
 Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Gly Cys Ala
 20 25 30
 Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala
 35 40 45
 Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro
 50 55 60
 Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile Lys
 65 70 75 80
 Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu
 85 90 95
 Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly
 100 105 110
 Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser
 115 120 125
 Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys
 130 135 140
 Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr
 145 150 155 160
 Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala
 165 170 175
 Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln
 180 185 190
 Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly
 195 200 205
 Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu
 210 215 220
 Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu
 225 230 235 240
 Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly
 245 250 255

<210> 336
 <211> 188
 <212> PRT
 <213> Homo sapiens

<400> 336
 Met Gln His His His His His His His Ser Thr Gly Tyr Glu Ser Asp
 5 10 15
 Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr
 20 25 30
 His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val
 35 40 45

Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro
50 55 60
Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser
65 70 75 80
His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln
85 90 95
Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu
100 105 110
Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys
115 120 125
Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
130 135 140
Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys
145 150 155 160
Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met
165 170 175
His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
180 185

<210> 337
<211> 324
<212> DNA
<213> Homo sapiens

<400> 337
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gcagttccat ccctgggtgg cgggtggaggc tgcgcactgc cggttagcgg tgcagcacag 120
tgggctccag ttctggactt cgcaccgcct ggtgcacccg catacgggtc cctgggtggg 180
ccagcacctc cgcccgaac gccccaccg cctccaccgc ccccgcactc cttcatcaaa 240
caggaacctt gctggggtgg tgcagaaccg cacgaagaac agtgcctgag cgcattctga 300
gaattctgca gatattcatc acac 324

<210> 338
<211> 462
<212> DNA
<213> Homo sapiens

<400> 338
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ccgcccagcc aggcgtcatc cggccaggcc aggatgtttc ctaacgcgcc ctacctgccc 180
agctgcctcg agagccagcc cgctattcgc aatcagggtt acagcacggg caccttcgac 240
gggacgcca gctacggtca caagccctcg caccatgcgg cgcagttccc caaccactca 300
ttcaagcatg aggatcccat gggccagcag ggctcgctgg gtgagcagca gtactcgggtg 360
ccgcccccg tctatggttg ccacaccccc accgacagct gcaccggcag ccaggctttg 420
ctgctgagga cgccctacag cagtgcacat ttatactgat ga 462

<210> 339
<211> 405
<212> DNA
<213> Homo sapiens

<400> 339
atgcagcatc accaccatca ccaccaggct ttgctgctga ggacgcccta cagcagtgc 60

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gccaccttaa agggccacag cacagggtac gagagcgata accacacaac gcccatcctc 180
tgcggagccc aatacagaat acacacgcac ggtgtcttca gaggcattca ggatgtgcga 240
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cccttcatgt gtgcttacct aggctgcaat aagagatatt ttaagctgtc ccacttacag 360
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<210> 340
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<212> DNA
<213> Homo sapiens

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tggccaagtt gtcagaaaaa gtttgcccg gtcagatgaat tagtccgcca tcacaacatg 300
catcagagaa acatgaccaa actccagctg gcgctttga 339

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<210> 341
<211> 1110
<212> DNA
<213> Homo sapiens

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<210> 342
<211> 99
<212> PRT
<213> Homo sapiens

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[illegible]

<211> 152

<213> Homo sapiens

[illegible]

<211> 133

<213> Homo sapiens

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5 10 15
Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met
20 25 30

```

Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr
      35              40              45
Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln
      50              55              60
Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg
      65              70              75              80
Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr
      85              90              95
Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg
      100             105             110
Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly
      115             120             125
Glu Lys Pro Tyr Gln
      130

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<210> 345
<211> 112
<212> PRT
<213> Homo sapiens

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<400> 345
Met Gln His His His His His His His Ser Arg Lys His Thr Gly Glu
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Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg
              20              25              30
Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro
      35              40              45
Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
      50              55              60
Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg
      65              70              75              80
Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg
              85              90              95
His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
      100             105             110

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<210> 346
<211> 369
<212> PRT
<213> Homo sapiens

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<400> 346
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Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe
      20              25              30
Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg
      35              40              45
Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln
      50              55              60
Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser
      65              70              75              80

```

Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly
 85 90 95
 Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro
 100 105 110
 Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu
 115 120 125
 Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr
 130 135 140
 Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro
 145 150 155 160
 Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met
 165 170 175
 Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr
 180 185 190
 Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln
 195 200 205
 Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg
 210 215 220
 Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr
 225 230 235 240
 Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg
 245 250 255
 Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly
 260 265 270
 Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe
 275 280 285
 Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys
 290 295 300
 Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His
 305 310 315 320
 Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys
 325 330 335
 Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
 340 345 350
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala
 355 360 365
 Leu

<210> 347
 <211> 21
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 <213> Artificial Sequence

<220>
 <223> Primer

<400> 347
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<210> 348
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Primer

<400> 348

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30

<210> 349

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 349

ggctccgacg tgcgggacct g

21

<210> 350

<211> 30

<212> DNA

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<220>

<223> Primer

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gaattctcaa agcgccagct ggagtttggt

30

<210> 351

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 351

cacagcacag ggtacgagag c

21

<210> 352

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 352

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30

<210> 353

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 353

cacgaagaac agtgcctgag cgcattcac

29

<210> 354

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 354

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32

<210> 355

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 355

caggttttgc tgctgaggac gccc

24

<210> 356

<211> 34

<212> DNA

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<223> Primer

<400> 356

cacggagaat tcatcactgg tatggtttct cacc

34

<210> 357

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 357

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28

<210> 358

<211> 30

<212> DNA
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<220>
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<400> 358
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<220>
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<400> 359
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<210> 360
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<220>
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<400> 360
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<210> 361
 <211> 33
 <212> DNA
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<220>
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<400> 361
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<220>
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<400> 362
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<210> 363

<211> 35
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<220>
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<400> 363
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<210> 364
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 <212> DNA
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<220>
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<400> 364
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<220>
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<220>
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<400> 366
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<210> 367
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<220>
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<400> 367
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<210> 368
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<220>
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<400> 368
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<220>
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<400> 369
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<220>
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<400> 372
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<210> 373
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<220>
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<400> 373
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<220>
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<400> 374
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<210> 376
 <211> 34
 <212> DNA
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<220>
 <223> Primer

<400> 376
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<210> 377
 <211> 1292
 <212> DNA
 <213> Homo sapiens

<220>
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758

<223> n = A,T,C or G

<400> 377

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<210> 378

<211> 1291

<212> DNA

<213> Homo sapiens

<400> 378

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1291

<210> 379

<211> 1281

<212> DNA

<213> Homo sapiens

<400> 379

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1281

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<210> 380

<211> 3020

<212> DNA

<213> Homo sapiens

<400> 380

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<210> 381

<211> 1291

<212> DNA

<213> Homo sapiens

<400> 381

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<210> 382
<211> 1491
<212> DNA
<213> Homo sapiens

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<400> 382
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caggaaccga gctggggtgg tgcagaaccg cacgaagaac agtgccctgag cgcattcacc 360
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<210> 383
<211> 1251
<212> DNA
<213> Homo sapiens

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<400> 383
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<210> 384
 <211> 228
 <212> DNA
 <213> Homo sapiens

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<400> 384
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cagaggttga tctttgccgg aaaacagctg gaagatggtc gtaccctgtc tgactacaac 180
atccagaaaag agtccacctt gcacctggta ctccgtctca gaggtggg 228

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<210> 385
 <211> 1515
 <212> DNA
 <213> Homo sapiens

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<400> 385
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gaacagtgcc tgagcgcatt caccgttcac ttctccggcc agttcactgg cacagccgga 540
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aggatgtttc ctaacgcgcc ctatctgccc agctgcctcg agagccagcc cgctattcgc 660
aatcaggggt acagcacggc cacccttcgac gggacgccc gctacggtca cagccctcgc 720
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```

ggctcgctgg gtgagcagca gtactcgggtg cgcgcgcgcg tctatggctg ccacaccccc 840
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```

<210> 386

<211> 648

<212> DNA

<213> Homo sapiens

<400> 386

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caaatgacat cccagcttga atgcatgacc tggaaatcaga tgaacttagg agccacctta 540
aagggccaca gcacagggtg cgagagcgat aaccacaaa cgccatcct ctgcggagcc 600
caatacagaa tacacacgca cgggtgtcttc agaggcattc agtgatga 648

```

<210> 387

<211> 1089

<212> DNA

<213> Homo sapiens

<400> 387

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cgctacgggc cttcgggtcc tctccgccc agccaggcgt catccggcca ggccaggatg 180
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tgtgcttacc caggctgcaa taagagatat tttaagctgt cccacttaca gatgcacagc 780
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tgtaaaactt gtcagcgaaa gttctcccg tccgaccacc tgaagaccca caccaggact 960
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tcagatgaat tagtccgcca tcacaacatg catcagagaa acatgaccaa actccagctg 1080
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<210> 388

<211> 1035

<212> DNA

<213> Homo sapiens

<400> 388

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accgccttcc tcggcttggg tgttgtcgac aacaacggca acggcgcacg agtccaacgc 180
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```

<210> 389

<211> 1263

<212> DNA

<213> Homo sapiens

<400> 389

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<210> 390

<211> 1707

<212> DNA

<213> Homo sapiens

<400> 390

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cacttacaga tgacagcag gaagcacact ggtgagaaac cataccagtg tgacttcaag 1440
gactgtgaac gaagggtttt tegtccagac cagctcaaaa gacaccaaag gagacataca 1500
ggtgtgaaac cattccagt taaaacttgt cagcgaaagt tctcccggtc cgaccacctg 1560
aagaccaca ccaggactca tacaggtgaa aagcccttca gctgtcgggt gccaaagttgt 1620
cagaaaaagt ttgcccggtc agatgaatta gtccgccatc acaacatgca tcagagaaac 1680
atgaccaaac tccagctggc gctttga 1707

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<210> 391

<211> 344

<212> PRT

<213> Homo sapiens

<400> 391

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Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly
          5                      10                      15

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Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys
          20                      25                      30

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Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val

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35	40	45
Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser		
50	55	60
Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala		
65	70	75 80
Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu		
	85	90 95
Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys		
	100	105 110
Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro		
	115	120 125
Ala Glu Phe His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala		
	130	135 140
Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser		
	145	150 155 160
Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly		
	165	170 175
Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro		
	180	185 190
Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg		
	195	200 205
Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly		
	210	215 220
His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys		
	225	230 235 240
His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr		
	245	250 255
Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys		
	260	265 270
Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn		
	275	280 285
Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met		
	290	295 300
Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp		
	305	310 315 320
Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr		

335

Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu
210 215 220

Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr
 225 230 235 240
 Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro
 245 250 255
 Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr
 260 265 270
 Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr
 275 280 285
 Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser
 290 295 300
 His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro
 305 310 315 320
 Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro
 325 330 335
 Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln
 340 345 350
 Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met
 355 360 365
 Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala
 370 375 380
 Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr
 385 390 395 400
 Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe
 405 410 415
 Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu
 420 425 430
 Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala
 435 440 445
 Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met
 450 455 460
 His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys
 465 470 475 480
 Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln
 485 490 495
 Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
 500 505 510

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
 515 520 525
 Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe
 530 535 540
 Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn
 545 550 555 560
 Met Thr Lys Leu Gln Leu Ala Leu
 565

<210> 393
 <211> 420
 <212> PRT
 <213> Homo sapiens

<400> 393
 Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly
 5 10 15
 Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys
 20 25 30
 Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val
 35 40 45
 Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser
 50 55 60
 Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala
 65 70 75 80
 Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu
 85 90 95
 Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys
 100 105 110
 Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro
 115 120 125
 Ala Glu Phe Pro Leu Val Pro Arg Gly Ser Pro Met Gly Ser Asp Val
 130 135 140
 Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly
 145 150 155 160
 Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val
 165 170 175
 Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly
 180 185 190

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Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His
 195 200 205
 Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu
 210 215 220
 Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr
 225 230 235 240
 Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro
 245 250 255
 Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr
 260 265 270
 Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr
 275 280 285
 Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser
 290 295 300
 His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro
 305 310 315 320
 Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro
 325 330 335
 Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln
 340 345 350
 Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met
 355 360 365
 Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala
 370 375 380
 Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr
 385 390 395 400
 Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe
 405 410 415
 Arg Gly Ile Gln
 420

<210> 394

<211> 362

<212> PRT

<213> Homo sapiens

<400> 394

Met His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro

5					10					15					
His	Glu	Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val	His	Phe	Ser	Gly	Gln
			20				25						30		
Phe	Thr	Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly	Pro	Phe	Gly	Pro	Pro
		35				40						45			
Pro	Pro	Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg	Met	Phe	Pro	Asn	Ala
50					55						60				
Pro	Tyr	Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro	Ala	Ile	Arg	Asn	Gln
65				70						75				80	
Gly	Tyr	Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro	Ser	Tyr	Gly	His	Thr
			85				90						95		
Pro	Ser	His	His	Ala	Ala	Gln	Phe	Pro	Asn	His	Ser	Phe	Lys	His	Glu
			100				105						110		
Asp	Pro	Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu	Gln	Gln	Tyr	Ser	Val
115					120						125				
Pro	Pro	Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr	Asp	Ser	Cys	Thr	Gly
130					135						140				
Ser	Gln	Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser	Ser	Asp	Asn	Leu	Tyr
145				150						155				160	
Gln	Met	Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp	Asn	Gln	Met	Asn	Leu
			165				170						175		
Gly	Ala	Thr	Leu	Lys	Gly	His	Ser	Thr	Gly	Tyr	Glu	Ser	Asp	Asn	His
			180				185						190		
Thr	Thr	Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg	Ile	His	Thr	His	Gly
195					200						205				
Val	Phe	Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val	Pro	Gly	Val	Ala	Pro
210					215						220				
Thr	Leu	Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu	Lys	Arg	Pro	Phe	Met
225				230						235				240	
Cys	Ala	Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe	Lys	Leu	Ser	His	Leu
			245				250						255		
Gln	Met	His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys	Pro	Tyr	Gln	Cys	Asp
			260				265						270		
Phe	Lys	Asp	Cys	Glu	Arg	Arg	Phe	Phe	Arg	Ser	Asp	Gln	Leu	Lys	Arg
275					280						285				
His	Gln	Arg	Arg	His	Thr	Gly	Val	Lys	Pro	Phe	Gln	Cys	Lys	Thr	Cys

Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His
 180 185 190

Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly
 195 200 205

Val Phe Arg Gly Ile Gln
 210

<210> 396

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 396

gacgaaagca tatgcactcc ttcatcaaac

30

<210> 397

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 397

cgcgtgaatt catcactgaa tgcctctgaa g

31

<210> 398

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 398

cgataagcat atgacggccg cgtccgataa c

31

<210> 399

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 399

cgcgtgaatt catcactgaa tgcctctgaa g

31

<210> 400
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 400
 cgataagcat atgacggccg cgtccgataa c 31

<210> 401
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 401
 gtctgcagcg gccgctcaaa gcgccagc 28

<210> 402
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 402
 gacgaaagca tatgactcc ttcacaaac 30

<210> 403
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 403
 gtctgcagcg gccgctcaaa gcgccagc 28

<210> 404
 <211> 449
 <212> PRT
 <213> Homo sapiens

<400> 404
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
 1 5 10 15

Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
 20 25 30
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
 35 40 45
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro
 50 55 60
 Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
 65 70 75 80
 Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
 85 90 95
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
 100 105 110
 Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
 115 120 125
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
 130 135 140
 Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
 145 150 155 160
 Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
 165 170 175
 Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
 180 185 190
 Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
 195 200 205
 Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
 210 215 220
 Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
 225 230 235 240
 Met Asn Leu Gly Ala Thr Leu Lys Gly Val Ala Ala Gly Ser Ser Ser
 245 250 255
 Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Ser Thr Gly Tyr Glu
 260 265 270
 Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile
 275 280 285
 His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro
 290 295 300
 Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys
 305 310 315 320
 Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys
 325 330 335
 Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
 340 345 350
 Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
 355 360 365
 Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
 370 375 380
 Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
 385 390 395 400
 His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
 405 410 415
 Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
 420 425 430
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala
 435 440 445

Leu

<210> 405

<211> 428

<212> PRT

<213> Homo sapiens

<400> 405

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Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
 1              5              10              15
Ser Pro Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Thr
      20              25              30
Gln Trp Ala Pro Val Leu Asp Phe Val Pro Pro Gly Ala Pro Val Cys
      35              40              45
Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Leu Pro
      50              55              60
Pro Pro Pro Ser His Ser Phe Thr Lys Gln Glu Pro Ser Trp Gly Gly
65              70              75              80
Thr Glu Pro His Ala Gly Gln Gly Arg Ser Ala Leu Val Ala His Ser
      85              90              95
Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
      100             105             110
Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
      115             120             125
Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
      130             135             140
Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
145             150             155             160
Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Ser
      165             170             175
Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Pro Gly Glu Gln Gln
      180             185             190
Tyr Ser Ala Pro Pro Pro Val Cys Gly Cys Arg Thr Pro Thr Gly Ser
      195             200             205
Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Ala Pro Tyr Ser Gly Gly
      210             215             220
Asp Leu His Gln Thr Thr Ser Gln Leu Gly His Met Ala Trp Asn Gln
225             230             235             240
Thr Asn Leu Gly Ala Thr Leu Lys Gly His Gly Thr Gly Tyr Glu Ser
      245             250             255
Asp Asp His Thr Thr Pro Ile Leu Cys Gly Thr Gln Tyr Arg Ile Arg
      260             265             270
Ala Arg Gly Val Leu Arg Gly Thr Gln Asp Val Arg Cys Val Pro Gly
      275             280             285
Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg
      290             295             300
Pro Leu Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg His Phe Lys Pro
305             310             315             320
Ser Arg Leu Arg Val Arg Gly Arg Glu Arg Thr Gly Glu Lys Pro Tyr
      325             330             335
Gln Arg Asp Phe Lys Asp Arg Gly Arg Gly Leu Leu Arg Pro Asp Gln
      340             345             350

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Leu Lys Arg His Gln Arg Gly His Thr Gly Val Lys Pro Leu Gln Cys
 355 360 365
 Glu Ala Arg Arg Arg Pro Pro Arg Pro Gly His Leu Lys Val His Thr
 370 375 380
 Arg Thr His Thr Gly Gly Glu Pro Phe Ser Cys Arg Trp Pro Ser Cys
 385 390 395 400
 Gln Glu Lys Ser Ala Arg Pro Asp Glu Ser Ala Arg Arg His Asn Met
 405 410 415
 His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
 420 425

<210> 406

<211> 414

<212> PRT

<213> Homo sapiens

<220>

<221> VARIANT

<222> 85, 86, 172, 173, 242, 245, 246, 247

<223> Xaa = Any Amino Acid

<400> 406

Met Gly Ser Asp Val Arg Asp Leu Ser Ala Leu Leu Pro Ala Val Pro
 1 5 10 15
 Ser Leu Gly Asp Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
 20 25 30
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala His
 35 40 45
 Gly Pro Leu Gly Gly Pro Ala Pro Pro Ser Ala Pro Pro Pro Pro
 50 55 60
 Pro Pro Pro Pro His Ser Phe Ile Lys Gln Gly Pro Ser Trp Gly Gly
 65 70 75 80
 Ala Glu Leu His Xaa Xaa Gln Tyr Leu Ser Ala Phe Thr Val His Ser
 85 90 95
 Ser Gly Gln Val His Trp His Gly Arg Gly Leu Ser Leu Arg Ala Pro
 100 105 110
 Arg Pro Pro Ser Ala Gln Pro Gly Val Ile Arg Pro Gly Gln Asp Val
 115 120 125
 Ser Arg Ala Leu Pro Ala Gln Pro Pro Arg Glu Pro Ala Arg Tyr Pro
 130 135 140
 Gln Ser Gly Leu Gln His Gly His Leu Arg Arg Gly Val Arg Leu Arg
 145 150 155 160
 Ser His Ala Leu Ala Pro Cys Gly Ala Val Leu Xaa Xaa Thr Arg Ala
 165 170 175
 Gly Ser His Gly Pro Ala Gly Ser Ala Gly Ala Ala Val Leu Gly Ala
 180 185 190
 Ala Pro Gly Leu Trp Pro Pro His Pro Arg Arg Gln Leu Arg Arg Gln
 195 200 205
 Pro Gly Phe Ala Ala Glu Gly Ala Leu Gln Arg Arg Phe Ile Pro Ser
 210 215 220
 Asp Val Pro Ala Val His Gly Leu Glu Ser Asp Glu Pro Arg Gly Arg
 225 230 235 240
 Leu Xaa Gly Pro Xaa Xaa Xaa Val Arg Glu Arg Ser His Asn Ala Arg

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                245                250                255
Pro Leu Arg Ser Pro Ile Gln Asn Thr His Ala Arg Cys Leu Gln Gly
                260                265                270
Arg Ser Gly Cys Ala Pro Cys Ala Trp Ser Ser Pro Asp Ser Cys Thr
                275                280                285
Val Gly Ile Gly Gln Gly Thr Pro Pro His Val Cys Leu Pro Arg Leu
                290                295                300
Gln Glu Val Ser Glu Ala Ala Pro Leu Thr Asp Ala Arg Glu Ala Arg
305                310                315                320
Trp Glu Thr Ile Pro Val Leu Gln Gly Leu Trp Thr Glu Val Phe Leu
                325                330                335
Leu Arg Pro Ala Gln Lys Thr Pro Gly Glu Ala Tyr Arg Cys Glu Ala
                340                345                350
Ile Pro Ala Asp Leu Ser Ala Arg Val Leu Pro Ala Gln Pro Pro Glu
                355                360                365
Asp Pro Arg Gln Asp Ser Cys Arg Lys Ala Pro Gln Leu Ser Val Val
                370                375                380
Arg Leu Ser Glu Lys Ala Cys Pro Val Lys Val Gly Pro Pro Ser Arg
385                390                395                400
His Ala Ser Glu Gly His Asp Arg Thr Pro Ala Gly Ala Leu
                405                410

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<210> 407
 <211> 417
 <212> PRT
 <213> Homo sapiens

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<400> 407
Met Gly Ser Asp Val Arg Asp Leu Ser Ala Leu Leu Pro Thr Ala Pro
 1                5                10                15
Ser Leu Gly Gly Gly Gly Asp Cys Thr Leu Pro Val Ser Gly Thr Ala
                20                25                30
Gln Trp Ala Pro Val Pro Ala Ser Ala Pro Pro Gly Ala Ser Ala Tyr
                35                40                45
Asp Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro
50                55                60
Pro Pro Pro Pro His Ser Cys Gly Glu Gln Gly Pro Ser Trp Gly Gly
65                70                75                80
Ala Glu Pro Arg Glu Gly Gln Cys Leu Ser Ala Pro Ala Val Arg Phe
                85                90                95
Ser Gly Arg Phe Thr Gly Thr Val Gly Ala Cys Arg Tyr Gly Pro Leu
100                105                110
Gly Pro Pro Pro Pro Ser Gln Ala Pro Ser Gly Gln Thr Arg Met Leu
115                120                125
Pro Ser Ala Pro Tyr Leu Ser Ser Cys Leu Arg Ser Arg Ser Ala Ile
130                135                140
Arg Ser Gln Gly Arg Ser Thr Ala Pro Ser Ala Gly Arg Pro Ala Met
145                150                155                160
Ala Pro Thr Leu Ala Pro Pro Ala Gln Ser His Tyr Ser Gln His Gly
                165                170                175
Val Leu His Gly Pro Ala Gly Leu Ala Gly Ala Ala Val Leu Gly Ala
180                185                190
Ala Pro Gly Leu Trp Leu Pro His Pro His Arg Gln Leu His Arg Gln

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195 200 205
 Pro Gly Phe Ala Ala Glu Asp Ala Leu Gln Gln Gln Phe Ile Pro Asn
 210 215 220
 Asp Ile Pro Ala Met His Asp Leu Glu Ser Asp Glu Leu Arg Ser His
 225 230 235 240
 Leu Lys Gly Pro Gln His Arg Val Arg Glu Arg Pro His Asn Ala His
 245 250 255
 Pro Leu Arg Ser Pro Ile Gln Asn Thr His Ala Arg Cys Leu Gln Arg
 260 265 270
 His Ser Gly Cys Ala Thr Cys Ala Trp Ser Ser Pro Asp Ser Cys Thr
 275 280 285
 Val Ala Pro Glu Thr Ser Glu Asn Ala Pro Trp Cys Val Leu Pro Gly
 290 295 300
 Leu Gln Gly Val Phe Ala Val Pro Leu Thr Gly Ala Gln Gln Glu Ala
 305 310 315 320
 His Trp Asp Ala Thr Pro Val Arg Leu Gln Gly Pro Trp Thr Arg Ala
 325 330 335
 Ser Pro Phe Gly Thr Ser Pro Arg Asp Thr Lys Gly Asp Ile Gln Val
 340 345 350
 Arg Asn His Ser Ser Val Arg Leu Val Ser Glu Gly Ser Pro Gly Pro
 355 360 365
 Thr Thr Gly Pro Thr Pro Gly Pro Thr Arg Val Gly Ser Pro Ser Ala
 370 375 380
 Ala Gly Gly Gln Ala Ala Arg Glu Gly Ser Pro Ser Gln Thr Asn Ser
 385 390 395 400
 Val Ile Thr Thr Cys Ile Ser Glu Thr Leu Asn Ser Ser Trp Arg Phe
 405 410 415
 Glu

<210> 408
 <211> 429
 <212> PRT
 <213> Homo sapiens

<400> 408
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
 1 5 10 15
 Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
 20 25 30
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
 35 40 45
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro
 50 55 60
 Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
 65 70 75 80
 Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
 85 90 95
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
 100 105 110
 Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
 115 120 125
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile

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      130              135              140
Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
145              150              155              160
Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
      165              170              175
Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
      180              185              190
Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
      195              200              205
Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
      210              215              220
Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
225              230              235              240
Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser
      245              250              255
Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His
      260              265              270
Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly
      275              280              285
Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg
      290              295              300
Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu
305              310              315              320
Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr
      325              330              335
Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln
      340              345              350
Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys
      355              360              365
Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His
      370              375              380
Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser
385              390              395              400
Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn
      405              410              415
Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
      420              425

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<210> 409

<211> 495

<212> PRT

<213> Homo sapiens

<400> 409

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Met Ala Ala Pro Gly Ala Arg Arg Ser Leu Leu Leu Leu Leu Ala
 1              5              10              15
Gly Leu Ala His Gly Ala Ser Ala Leu Phe Glu Asp Leu Met Gly Ser
      20              25              30
Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly
      35              40              45
Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala
      50              55              60
Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu

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65					70					75					80
Gly	Gly	Pro	Ala	Pro	Pro	Pro	Ala	Pro	Pro	Pro	Pro	Pro	Pro	Pro	His
				85					90					95	
Ser	Phe	Ile	Lys	Gln	Glu	Pro	Ser	Trp	Gly	Gly	Ala	Glu	Pro	His	Glu
			100					105					110		
Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val	His	Phe	Ser	Gly	Gln	Phe	Thr
		115					120					125			
Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly	Pro	Phe	Gly	Pro	Pro	Pro	Pro
	130					135					140				
Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg	Met	Phe	Pro	Asn	Ala	Pro	Tyr
145					150					155					160
Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro	Ala	Ile	Arg	Asn	Gln	Gly	Tyr
				165					170					175	
Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro	Ser	Tyr	Gly	His	Thr	Pro	Ser
			180					185					190		
His	His	Ala	Ala	Gln	Phe	Pro	Asn	His	Ser	Phe	Lys	His	Glu	Asp	Pro
		195					200					205			
Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu	Gln	Gln	Tyr	Ser	Val	Pro	Pro
	210					215					220				
Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr	Asp	Ser	Cys	Thr	Gly	Ser	Gln
225					230					235					240
Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser	Ser	Asp	Asn	Leu	Tyr	Gln	Met
				245					250					255	
Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp	Asn	Gln	Met	Asn	Leu	Gly	Ala
			260					265					270		
Thr	Leu	Lys	Gly	His	Ser	Thr	Gly	Tyr	Glu	Ser	Asp	Asn	His	Thr	Thr
		275					280					285			
Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg	Ile	His	Thr	His	Gly	Val	Phe
	290					295					300				
Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val	Pro	Gly	Val	Ala	Pro	Thr	Leu
305					310					315					320
Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu	Lys	Arg	Pro	Phe	Met	Cys	Ala
				325					330					335	
Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe	Lys	Leu	Ser	His	Leu	Gln	Met
			340					345					350		
His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys	Pro	Tyr	Gln	Cys	Asp	Phe	Lys
		355					360					365			
Asp	Cys	Glu	Arg	Arg	Phe	Phe	Arg	Ser	Asp	Gln	Leu	Lys	Arg	His	Gln
	370					375					380				
Arg	Arg	His	Thr	Gly	Val	Lys	Pro	Phe	Gln	Cys	Lys	Thr	Cys	Gln	Arg
385					390					395					400
Lys	Phe	Ser	Arg	Ser	Asp	His	Leu	Lys	Thr	His	Thr	Arg	Thr	His	Thr
				405					410					415	
Gly	Glu	Lys	Pro	Phe	Ser	Cys	Arg	Trp	Pro	Ser	Cys	Gln	Lys	Lys	Phe
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<210> 410
 <211> 504
 <212> PRT
 <213> Homo sapiens

<400> 410
 Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu
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 Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
 20 25 30
 Lys Glu Gly Ile Pro Pro Asp Gln Arg Leu Ile Phe Ala Gly Lys
 35 40 45
 Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu
 50 55 60
 Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Ala Met Gly Ser Asp
 65 70 75 80
 Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly
 85 90 95
 Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro
 100 105 110
 Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly
 115 120 125
 Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro His
 130 135 140
 Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu
 145 150 155 160
 Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr
 165 170 175
 Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro
 180 185 190
 Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr
 195 200 205
 Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr
 210 215 220
 Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser
 225 230 235 240
 His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro
 245 250 255
 Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro
 260 265 270
 Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln
 275 280 285
 Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met
 290 295 300
 Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala
 305 310 315 320
 Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr
 325 330 335
 Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe
 340 345 350
 Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu
 355 360 365
 Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala

370						375						380					
Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe	Lys	Leu	Ser	His	Leu	Gln	Met		
385					390					395					400		
His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys	Pro	Tyr	Gln	Cys	Asp	Phe	Lys		
				405					410					415			
Asp	Cys	Glu	Arg	Arg	Phe	Phe	Arg	Ser	Asp	Gln	Leu	Lys	Arg	His	Gln		
			420					425					430				
Arg	Arg	His	Thr	Gly	Val	Lys	Pro	Phe	Gln	Cys	Lys	Thr	Cys	Gln	Arg		
		435					440						445				
Lys	Phe	Ser	Arg	Ser	Asp	His	Leu	Lys	Thr	His	Thr	Arg	Thr	His	Thr		
	450					455					460						
Gly	Glu	Lys	Pro	Phe	Ser	Cys	Arg	Trp	Pro	Ser	Cys	Gln	Lys	Lys	Phe		
465					470					475					480		
Ala	Arg	Ser	Asp	Glu	Leu	Val	Arg	His	His	Asn	Met	His	Gln	Arg	Asn		
				485					490						495		
Met	Thr	Lys	Leu	Leu	Ala	Leu											
				500													

<210> 411
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 <212> PRT
 <213> Homo sapiens

<400> 411
 Val Leu Asp Phe Ala Pro Pro Gly Ala Ser
 1 5 10

<210> 412
 <211> 15
 <212> PRT
 <213> Homo sapiens

<400> 412
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala
 1 5 10 15

<210> 413
 <211> 15
 <212> PRT
 <213> Homo sapiens

<400> 413
 Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu
 1 5 10 15